

# Mineral Industry Surveys

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## MOLYBDENUM IN JUNE 2005

Domestic production of molybdenum in concentrate in June 2005 was about 14% more than that of the previous month and was about 44% more than that of June 2004, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 5,930 metric tons (t) at the beginning of 2005 and 6,000 t at the end of June.

According to Ryan's Notes (2005b), the June monthly average prices for U.S. ferromolybdenum (FeMo) ranged from \$41.563 to \$43.063 per pound of molybdenum content, compared with \$39.389 to \$40.444 in May. European FeMo monthly averages ranged from \$90.500 to \$92.875 per kilogram (kg) of molybdenum content in June as compared with \$90.222 to \$92.833 in May. In June, worldwide molybdenum oxide prices ranged from \$36.938 to \$38.000 per pound versus \$36.278 to \$37.333 in May.

Local authorities in the major molybdenum producing area of Huludao, Liaoning Province, in northern China confirmed that mining licenses are to be auctioned in a move that could restart production in the area in July. Mines in Huludao have been closed for government safety checks since February, but the local authorities are preparing to sell licenses that have expired or been revoked for tax fraud or illegal mining activity. The mines to be put up for auction account for two thirds of Huludao's molybdenum ore output capacity. Huludao contributes about one quarter of the country's molybdenum concentrate supply and about half of the country's annual FeMo exports (Metal Bulletin, 2005).

High FeMo prices are changing molybdenum consumption patterns causing Japanese steel mills to replace FeMo with cheaper molybdenum oxide or molybdenum-bearing scrap. In addition, in April, Nippon Steel & Sumikin Stainless Steel Corp.

released NSSC 160R, a new stainless alloy with no molybdenum or nickel content. The material, which was aimed at replacing stainless steel used in food preparation plants, was priced 27% lower than 304-grade stainless steel that contains molybdenum and nickel. The company planned to produce 2,000 to 3,000 metric tons per year of the molybdenum-free material (Platts Metals Week, 2005).

The European Confederation of Iron and Steel Industries (Eurofer) compiled data to finalize a draft petition asking the European Union (EU) either to conduct an interim review of the antidumping duties against imports of Chinese FeMo or to temporarily suspend the duty. Eurofer was expected to seek a suspension of the duty, as a suspension requires less time to obtain than elimination of the duty, which would require a full EU investigation. A 6- to 9-month suspension of the 22.5% antidumping duty would provide consumers with relief and also allow Eurofer time to seek an interim review that could lead to a permanent change in the duty, which was imposed in February 2002 (Ryan's Notes, 2005a).

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, U.S. consumption by end use, stocks of molybdenum material in May and June 2005, and trade data for April and May 2005.

## References Cited

- Metal Bulletin, 2005, Huludao license sale could enable moly restart in July: Metal Bulletin, no. 8897, June 13, p. 16.  
Platts Metals Week, 2005, FeMo static in Japan: Platts Metals Week, v. 76, no. 24, June 13, p. 3.  
Ryan's Notes, 2005a, Eurofer readies attack on FeMo duty: Ryan's Notes, v. 11, no. 26, June 27, p. 2.  
Ryan's Notes, 2005b, [untitled]: Ryan's Notes, v. 11, no. 27, July 4, p. 10.

TABLE 1  
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS<sup>1</sup>

(Metric tons, contained molybdenum)

	2004		2005		
	January- December <sup>p</sup>	January- June	May	June	January- June
Production	42,100	19,100	4,190 <sup>r</sup>	4,780	29,300
Shipments: <sup>2</sup>					
Domestic	31,100	14,700	3,000 <sup>r</sup>	3,400	18,500
Export	11,100	4,890	1,560	1,860	10,300

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>As reported by producers.

TABLE 2  
U.S. REPORTED PRODUCTION AND SHIPMENTS OF MOLYBDENUM  
PRODUCTS<sup>1</sup>

(Metric tons, contained molybdenum)

	2004		2005		
	January- December <sup>p</sup>	January- June	May <sup>r</sup>	June	January- June
Gross production	66,300	30,800	6,900	6,890	40,000
Internal consumption <sup>2</sup>	42,000	19,500	4,370	4,190	25,100
Gross shipments	39,300	18,400	3,990	3,840	24,000

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Includes molybdic oxides, metal powder, ammonium molybdate, sodium molybdate, and other

TABLE 3  
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS<sup>1</sup>  
(Kilograms, contained molybdenum)

End use	Molybdc oxides	Ferro molyb- denum <sup>2</sup>	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2005, May:						
Steel:						
Carbon	32,300 <sup>r</sup>	W	--	--	W	32,300 <sup>r</sup>
High-strength low-alloy	31,200 <sup>r</sup>	15,900 <sup>r</sup>	--	--	11,300	58,400
Stainless and heat-resisting	164,000 <sup>r</sup>	68,100 <sup>r</sup>	--	W	6,510	239,000 <sup>r</sup>
Full alloy	170,000	228,000	--	--	1,510	400,000
Tool	80,600	W	--	--	--	80,600
Total	479,000 <sup>r</sup>	312,000 <sup>r</sup>	--	W	19,400	810,000 <sup>r</sup>
Cast irons (gray, malleable, and ductile iron)	W	9,370	--	--	763	10,100
Superalloys	69,500	W	--	(3)	130,000	200,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	137	2,100 <sup>r</sup>	--	--	11	2,250 <sup>r</sup>
Mill products made from metal powder <sup>4</sup>	--	--	--	--	119,000 <sup>r</sup>	119,000 <sup>r</sup>
Cemented carbides and related products <sup>5</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,090	1,090
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,700	10,700
Other	1,090	33,600	72,700	1,840	16,800	126,000
Grand total	627,000 <sup>r</sup>	357,000 <sup>r</sup>	72,700	1,840	299,000 <sup>r</sup>	1,360,000 <sup>r</sup>
Stocks, May 31, 2005	426,000 <sup>r</sup>	187,000 <sup>r</sup>	3,630	48,300	855,000	1,520,000
2005, June:						
Steel:						
Carbon	9,910	W	--	--	W	9,910
High-strength low-alloy	34,700	8,110	--	--	11,300	54,100
Stainless and heat-resisting	153,000	66,400	--	W	6,510	226,000
Full alloy	153,000	199,000	--	--	1,510	354,000
Tool	74,700	W	--	--	--	74,700
Total	426,000	273,000	--	W	19,400	719,000
Cast irons (gray, malleable, and ductile iron)	W	9,360	--	--	763	10,100
Superalloys	84,700	W	--	(3)	113,000	198,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	181	7,890	--	--	11	8,090
Mill products made from metal powder <sup>4</sup>	--	--	--	--	161,000	161,000
Cemented carbides and related products <sup>5</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,900	10,900
Other	1,090	32,300	73,400	1,840	16,800	125,000
Grand total	589,000	323,000	73,400	1,840	322,000	1,310,000
Stocks, June 30, 2005	466,000	208,000	4,540	47,800	850,000	1,580,000

<sup>1</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" category. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes calcium molybdate.

<sup>3</sup>Included in "Other" of the "Superalloys" category.

<sup>4</sup>Includes ingot, wire, rod, and sheet.

<sup>5</sup>Includes construction, mining, oil and gas, metalworking machinery.

TABLE 4  
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES  
(including roasted concentrate), BY COUNTRY<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2004		2005		
	January-December	January-May	April	May	January-May
Australia	30,500	9,250	--	9,180	91,400
Austria	1,310,000	124,000	--	--	2,590
Belgium	6,470,000	984,000	539,000	1,140,000	2,020,000
Brazil	31,000	11,000	--	3,180	7,250
Canada	1,370,000	229,000	648,000	502,000	1,770,000
Chile	1,380,000	926,000	--	849	111,000
China	36,000	--	1,100,000	590,000	1,750,000
Costa Rica	26,700	13,800	--	570	3,190
India	430	--	--	--	34,400
Italy	--	--	--	--	35,100
Japan	5,730,000	615,000	112,000	120,000	636,000
Korea, Republic of	95,200	25,000	1,350	--	5,770
Mexico	3,910,000	271,000	88,000	96,200	1,000,000
Netherlands	14,100,000	1,870,000	915,000	569,000	6,730,000
Sweden	38,200	--	--	--	--
Taiwan	19,200	8,830	--	--	3,600
United Kingdom	8,910,000	2,170,000	350,000	--	3,140,000
Other	2,770,000	297,000	136,000	170,000	314,000
Total	46,200,000	7,550,000	3,890,000	3,200,000	17,700,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 5  
U.S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2004		2005		
	January-December	January-May	April	May	January-May
Australia	1,090	818	--	--	--
Brazil	--	--	7,430	7,380	14,800
Canada	870,000	427,000	122,000	324,000	846,000
France	10,100	--	--	--	--
Indonesia	381	--	5,770	--	5,930
Mexico	33,700	14,100	--	--	4,530
Netherlands	--	--	--	--	33,300
Sweden	9,150	--	--	--	--
United Kingdom	491	491	--	--	--
Total	925,000	443,000	135,000	331,000	905,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS<sup>1</sup>

(Kilograms, unless otherwise specified)

Material	January-December 2004			May 2005			January-May 2005		
	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)
Ore and concentrates roasted	7,580,000	4,710,000	\$133,000	628,000	402,000	\$30,000	4,170,000	2,600,000	\$181,000
Ore and concentrates other	9,330,000	4,070,000	135,000	983,000	476,000	33,900	6,400,000	2,850,000	201,000
Molybdenum chemicals:									
Oxides and hydroxides	822,000	NA	15,800	96,000	NA	4,330	624,000	NA	17,400
Molydates of ammonium	1,940,000	1,330,000	18,400	212,000	129,000	2,510	1,530,000	1,050,000	18,800
Molydates (all others)	254,000	116,000	1,430	3,960	507	32	63,300	16,400	890
Molybdenum orange	1,030,000	NA	4,760	87,500	NA	475	369,000	NA	2,000
Ferromolybdenum	8,310,000	5,310,000	158,000	498,000	318,000	23,100	3,040,000	1,930,000	129,000
Molybdenum powders	139,000	95,200	4,930	5,050	4,620	500	31,000	26,500	2,570
Molybdenum unwrought	151,000	151,000	3,520	2,140	823	54	14,000	13,900	967
Molybdenum waste and scrap	454,000	415,000	10,200	7,270	2,630	72	206,000	200,000	14,300
Molybdenum wire	20,500	NA	2,010	1,250	NA	200	8,970	NA	1,350
Molybdenum other	132,000	NA	13,700	7,300	NA	1,320	63,100	NA	8,130
Total	30,200,000	16,200,000	501,000	2,530,000	1,330,000	96,500	16,500,000	8,690,000	577,000

NA Not available.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Customs value.

Source: U.S. Census Bureau.